

What is claimed is:

[Claim 1] A supply for material used in a material application system, comprising:

a duct having a first end connectable to a material recovery apparatus;
said duct having a second end that is closed by a fluidizing member;
at least one material inlet to said duct interior; and
at least one material outlet for fluidized material from said duct interior through which material can be provided to a material applicator during a material application process;
said duct being disconnected from said material recovery apparatus during a material application process.

[Claim 2] The supply of claim 1 wherein said material recovery apparatus produces a negative pressure within said duct when connected thereto.

[Claim 3] The supply of claim 2 wherein said material recovery apparatus comprises an after filter unit for a powder coating application system.

[Claim 4] The supply of claim 1 wherein said fluidizing member is releasable from said duct second end.

[Claim 5] The supply of claim 1 comprising a siphon ring that joins said duct second end to said fluidizing member; said material outlet being provided in said siphon ring.

[Claim 6] The supply of claim 1 wherein said duct comprises a generally cylindrical member having a diameter, said siphon ring having a diameter that is greater than said duct diameter.

[Claim 7] The supply of claim 5 wherein said siphon ring comprises an interior surface formed as an involute.

[Claim 8] The supply of claim 1 wherein during a material application process said duct is at ambient air pressure.

[Claim 9] A supply for material used in a material application system, comprising:

a duct having an open first end and a second end that is closed by a fluidizing member;

at least one material inlet to said duct interior; and

at least one material outlet for fluidized material from said duct interior through which material can be provided to a material applicator during a material application process;

said duct being generally at ambient air pressure during a material application process.

[Claim 10] A supply hopper for powder coating material used in a powder coating material application system, comprising:

a duct having a first open end and a second end that is closed by a fluidizing member;

at least one powder inlet to said duct interior; and

at least one powder outlet for fluidized powder from said duct interior through which powder can be provided to a powder spray applicator during a powder application process;

said duct being generally at ambient air pressure during a powder application process.

[Claim 11] A supply hopper for powder coating material, comprising:

a duct having an open first end and a second end closed by a fluidizing member;

a sieve positioned in said duct and being manually moveable between first and second positions; said second position being where said sieve is cleanable and said first position being where said sieve is in position to sieve powder that enters said duct through an inlet.

[Claim 12] The hopper of claim 11 wherein said sieve comprises a ring that carries an inflatable seal so that when said sieve is in said first position said seal can be inflated to secure said sieve in said duct in a fluid tight manner.

[Claim 13] The hopper of claim 11 wherein said sieve comprises a member with a vibration element therein; said vibration element traveling within said member under force of air pressure.

[Claim 14] A supply for material used in a material application system, comprising:

a duct, a fluidizing device and a suction device, said fluidizing device and suction device being disposed at one end of the duct to form a receptacle for material, said suction device having at least one port therein through which material is drawn out of said duct.

[Claim 15] The supply of claim 14 wherein said fluidizing device is mounted on a moveable support so that it can be positioned in sealing engagement with said duct for a supply mode of operation and can be positioned out of sealing engagement with said duct for a cleaning mode of operation.

[Claim 16] The supply of claim 15 wherein said suction device comprises an annular ring that is attached to said one end of the duct, said ring having a lower surface that contacts a seal surface on said fluidizing device when the supply operates in the supply mode.

[Claim 17] The supply of claim 16 wherein said suction device comprises a siphon ring having a contoured interior geometry.

[Claim 18] The supply of claim 17 wherein said geometry comprises an involute.

[Claim 19] The supply of claim 14 wherein said fluidizing member has a diameter that is greater than a diameter of said duct.

[Claim 20] The supply of claim 19 wherein said port is positioned close to said fluidizing member.